

Study on Economic Strategy of Green Finance Promoting the Development of New Energy Industry in Shandong Province

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Abstract: With global climate change and energy security issues becoming increasingly prominent, new energy industry (NEI) has become an important field to promote sustainable development. The purpose of this study is to explore the economic strategy of green finance (GF) in promoting the development of NEI in Shandong Province. Through in-depth research on the policy framework and practical operation of GF, we find that Shandong Province has made remarkable achievements in this field. Green financial policy covers many aspects, such as financial incentives, financial product innovation and policy guidance, which provides strong support for the NEI. On the practical level, the Shandong provincial government has established a close cooperative relationship with financial institutions, and strengthened financial institutions' support for new energy projects through joint loans and risk sharing. Shandong province has made a series of remarkable achievements in the economic strategy of GF promoting the development of NEI, which has laid a solid foundation for future sustainable development. However, it is still necessary to further strengthen supervision and innovate financial products in order to better lead the NEI to the road of high-quality development.

Keywords: Shandong Province, Green Finance, Economic Strategy, New Energy Industry.

1. Introduction

In recent years, with the global climate change becoming more and more prominent, and the depletion of traditional energy resources, the new energy industry (NEI) has gradually become an important engine of global economic development. As one of China's major economic provinces, Shandong Province has deeply recognized the strategic position of NEI in the historical process of economic transformation and upgrading, actively responded to the call of national green development, and devoted itself to promoting the development and growth of NEI [1].

As a sustainable and environment-friendly financial model, green finance (GF) plays an important role in promoting the development of NEI [2]. While thoroughly implementing the green financial policy, Shandong Province actively explores economic strategies suitable for the local conditions, aiming at providing solid financial support for the vigorous development of NEI.

The purpose of this paper is to analyze the potential impact of GF on sustainable development, economic growth and environmental improvement by deeply studying the economic strategy of promoting the development of NEI in Shandong Province. Through the research on government guidance, financial innovation and enterprise participation, this paper explores how to better play the role of GF in promoting the development of NEI and further enhance the competitiveness of Shandong Province in the field of green economy.

2. Policy and Practice of GF in Shandong Province

As one of the major economic provinces in China, Shandong Province has made remarkable achievements in sustainable development and ecological civilization

construction in recent years. As a powerful tool to promote economic transformation, GF has been fully valued and practiced in Shandong Province [3]. Shandong Province has actively responded to the national green financial policy, and formulated and implemented a series of policies and measures in line with local conditions.

According to the coupling coordination model [4-5], the development trend of coupling coordination between green financial system and NEI system in Shandong Province from 2010 to 2022 can be calculated (see Figure 1).

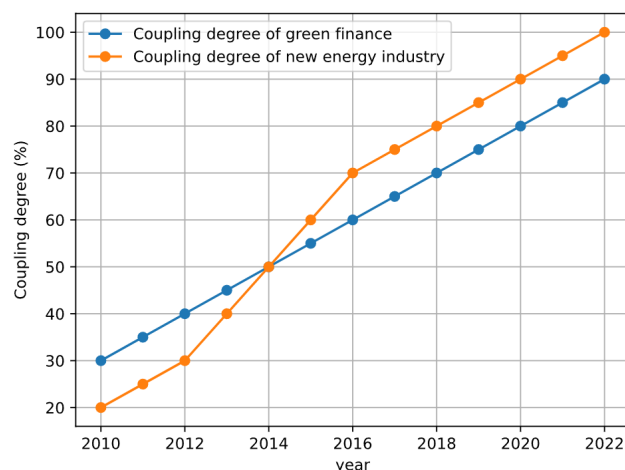


Figure 1. Line chart of coupling coordination degree between GF and NEI development in Shandong Province

From the perspective of coupling degree, the coupling degree of GF and NEI development in Shandong Province is also increasing, and it is in a moderate coordination stage from 2012 to 2018, and has gradually developed to a high coupling coordination, indicating that the benign coupling mechanism of GF and NEI development in Shandong Province has not yet formed, and there is still much room for

improvement, which needs to be further strengthened in terms of structure and scale.

Through tax incentives, financial subsidies and other means, financial institutions are encouraged to support new energy projects and reduce the cost of green financing for enterprises [6]. Promote financial institutions to design innovative financial products such as green credit and green bonds to meet the diversified financing needs of new energy industries. By setting up a special green financial development fund, we will guide social capital to participate in green investment and promote the inclination of financial resources to green industries.

Shandong province has also adopted a series of innovative practices in actual operation and achieved some remarkable results. The Shandong provincial government has established close cooperative relations with major banks, and promoted financial institutions to participate in green financing more actively through linkage loans and risk sharing. Establish a credit evaluation system for green enterprises, incorporate environmental protection and sustainable management of enterprises into the evaluation system, and provide them with more favorable financing conditions. Establish a green industry investment and financing platform, attract more social capital into the new energy field through market-oriented means, and promote the green industrial chain to be more perfect.

Through the above policies and practices, Shandong Province has made a series of remarkable achievements in GF. Under the guidance of policies, the scale of green financing has expanded year by year, providing more sufficient financial support for the NEI. The number and scale of new energy projects have increased significantly, covering wind energy, solar energy and other fields, which has promoted the diversified development of green industries in Shandong Province. Driven by GF, the ecological environment in Shandong Province has been improved, which has laid a solid foundation for sustainable economic development [7-8].

Although a series of achievements have been made, Shandong Province still faces some challenges in GF, such as insufficient innovation of financial products and imperfect green information disclosure system of enterprises. In the future, Shandong Province should continue to strengthen supervision, innovate financial products and enhance the sense of environmental responsibility of enterprises, so as to better play the leading role of GF in the development of NEI.

3. Present Situation of NEI in Shandong Province

As one of China's major economic provinces, Shandong Province has important geographical and industrial advantages in the development of NEI. This paper will discuss the present situation of NEI in Shandong Province, and analyze it from the aspects of investment scale, technical level and industrial structure.

The investment scale of Shandong Province in the field of new energy is increasing year by year, showing a steady growth trend. The government's policy support and guiding role in the NEI makes social capital more willing to invest in wind energy, solar energy and other fields. Not only has remarkable achievements been made in large-scale new energy projects, but also some breakthroughs have been made in small-scale distributed energy projects. The expansion of investment scale has provided a solid foundation for the

sustainable development of Shandong's economy.

Shandong province has made remarkable progress in the level of new energy technology. In terms of wind energy and solar energy, Shandong Province has not only introduced international leading technologies, but also made a series of achievements in R&D innovation. With the continuous improvement of new energy technology, the proportion of new energy in the energy structure has gradually increased, which has laid a solid foundation for realizing clean and efficient energy utilization [9].

The NEI in Shandong province presents a diversified development trend. In addition to the traditional wind and solar energy industries, emerging industries such as bioenergy and geothermal energy are also rising. This diversified industrial structure helps to reduce industrial risks and improve the resilience of the entire NEI chain. At the same time, diversified development has also promoted the application of new energy in a wider range of fields, and promoted the integration and development of new energy and traditional energy.

The policy support of Shandong provincial government in the field of new energy has been continuously strengthened, from financial incentives to preferential taxes, which have provided strong support for new energy enterprises. The government actively guides social capital to participate in new energy projects, which promotes the rapid development of the industry. In addition, policies and measures such as building a green financial system and strengthening new energy science and technology innovation have also provided a good policy environment for the NEI.

Although Shandong's NEI has made remarkable achievements, it still faces some challenges. These include the continuous advancement of technological innovation, deep integration with traditional energy sources, and new energy consumption. In the future, Shandong province needs to further optimize the industrial structure and promote the coordinated and sustainable development of NEI while upgrading its technical level and strengthening its innovation ability.

4. The Role of GF in NEI

Global climate change and energy crisis are prompting countries to turn to more sustainable energy forms. In this process of transformation, GF, as a financial model focusing on environmental sustainability, plays a vital role in the development of NEI.

(1) Promote green investment

GF has provided considerable financial support for the NEI, and attracted a lot of social capital to enter this field by issuing green bonds and setting up green trust funds [10]. This not only provides a source of funds for new energy enterprises, but also makes investors more inclined to choose environmentally sustainable projects, and promotes the development of the entire industrial chain in a greener direction.

(2) Reduce financing costs

The emergence of GF has reduced the financing cost of new energy enterprises. Green credit and preferential policies supported by the government make financial institutions more willing to provide financing for new energy projects, and at the same time reduce the financing risks of enterprises. This provides a good financial environment for the NEI to attract more investment.

(3) Promote technological innovation

The role of GF in the NEI not only stays at the capital level, but also promotes the industrial upgrading by supporting technological innovation. By launching green innovation funds and setting up subsidies for scientific and technological innovation, GF not only provides funds, but also encourages enterprises to conduct more in-depth research and innovation in new energy technologies, so as to promote the NEI to continuously improve its technological level.

(4) Promote the sustainable development of enterprises

The promotion of GF in NEI also makes enterprises pay more attention to sustainable development. In order to meet the relevant standards of GF, enterprises pay more attention to reducing environmental impact and improving energy efficiency in production, management and operation. This concept of sustainable development not only meets the market demand, but also makes enterprises more competitive.

(5) Enhance corporate social image

With the support of GF, new energy enterprises can better fulfill their social responsibilities and enhance their corporate image. By participating in social welfare projects, reducing carbon emissions and promoting the use of renewable energy, the reputation of enterprises in society will be enhanced, which will also create a better external environment for their future development.

Generally speaking, GF plays a driving role in the NEI, which not only provides financial support for enterprises and reduces financing costs, but also promotes the development of the whole industry by promoting technological innovation and sustainable development. In the future, with the deepening of the concept of GF, its role in the NEI will be more significant and contribute more to global sustainable development.

5. Economic Strategy Suggestion

Shandong province, as a big economic province in China, is facing a critical period of transformation of old and new kinetic energy and adjustment of economic structure. In order to achieve high-quality development, GF, as a powerful tool to promote economic transformation and upgrading, should become an important part of economic policy. Especially in the field of NEI, the development of NEI and sustainable economic growth can be effectively promoted by formulating and implementing targeted green financial policies.

5.1. The government guides new energy investment

The government should set a clear guiding direction in the green financial policy, and guide social capital to invest more in new energy fields through financial incentives, tax incentives and other means. Setting up a green industry development fund to support the scientific research, demonstration and promotion of new energy projects will be a key step to improve investment attraction. The guiding role of the government will drive more funds to flow to the NEI and promote technological innovation and industrial upgrading.

5.2. Innovation and optimization of financial products

In order to better serve the financing needs of new energy enterprises, financial institutions should actively develop and promote green financial products, such as green bonds, green credit and green funds. By innovating financial instruments,

the financing cost of enterprises can be reduced and the financing efficiency can be improved. At the same time, establish a financial service system that conforms to the characteristics of the NEI and provide all-round financial support, including multi-level and multi-dimensional services such as credit, insurance and risk management, so as to meet the financing needs of different enterprises.

5.3. Construction of green credit system

Establishing a green credit system is the basis for ensuring the steady development of GF. By evaluating the environmental protection and social responsibility of enterprises, establishing a reliable credit rating system will help reduce the financing risk. Financial institutions can provide low-interest loans to new energy enterprises with good credit more accurately, promote enterprises in the industry to actively fulfill their environmental protection responsibilities, and enhance the stability of overall GF.

5.4. Improve financial institutions' awareness of GF

It is very important to cultivate financial institutions' knowledge and understanding of GF and improve their willingness to support new energy industries. By holding training and seminars, financial practitioners can have a deeper understanding of the development prospects, technical characteristics and investment risks of the NEI. This will help financial institutions to better understand the needs of new energy enterprises and participate in GF more actively.

5.5. Strengthen supervision and transparency

Establish a sound green financial supervision system to ensure the implementation effect of green financial policies. At the same time, enterprises are required to disclose green information and improve transparency, so that the public and investors can understand the environmental protection situation and sustainable development plan of enterprises more clearly. The improvement of transparency will help to establish a more standardized and sustainable green financial market.

By formulating and implementing the above-mentioned green financial and economic strategies, Shandong Province is expected to move towards a greener and sustainable future in the field of NEI. These economic strategies will promote the vigorous development of NEI and provide strong support for the sustainable economic growth and ecological civilization construction in Shandong Province. At the same time, these strategies also provide feasible experience and reference for other regions in promoting the development of NEI.

6. Conclusions

Shandong Province has actively promoted the development of NEI by formulating a series of green financial policies. Government-guided financial support, financial product innovation and the establishment of a green credit system have significantly improved the financing capacity of new energy enterprises and promoted technological innovation and industrial upgrading. GF not only provides financial support for new energy enterprises, but also promotes the sustainable development of the whole industrial chain by guiding funds to green industries. Despite a series of achievements, Shandong Province still faces some challenges

in the development of NEI, such as the continuous advancement of technological innovation and the deep integration of NEI and traditional energy. In the future, it is necessary to further optimize the industrial structure, improve the technical level and strengthen the innovation ability, so as to adapt to the increasingly fierce international competition and realize the coordinated and sustainable development of the NEI. With the deepening of the concept of GF, Shandong's NEI is expected to take a more solid step on the road of sustainable development and contribute more to building a clean and sustainable social and economic system.

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